

What is claimed is:

1. A method for attenuating noise in at least two positive displacement compressors proximately located from each other having a reference compressor for providing reference operational settings for comparison with the remaining at least two compressors for use with at least one heating or cooling system, the steps comprising:
  - a) providing at least two compressors including a reference compressor, the at least two compressors having a selectably controllable rotational speed and a selectably controllable phase of operation;
  - b) providing a means of control for selectably controlling the rotational speed and the phase of operation of each of the at least two compressors;
  - c) providing a sensing means for sensing the rotational speed and the phase of operation of each of the two compressors;
  - d) controlling by the means of control the rotational speed of the at least two compressors at a predetermined rotational speed that is substantially the same for each of the at least two compressors; and
  - e) controlling by the means of control the phase of operation of the at least two compressors wherein the phase of operation of the remaining of the at least two compressors being shifted so that an outlet pressure pulse operatively produced by each of the remaining of the at least two compressors is substantially evenly spaced between successive outlet pulses operatively produced by the reference compressor.
2. The method of claim 1 wherein in the step e) a composite pressure pulse frequency is produced that is higher than the frequency between successive outlet pulses of the reference compressor.
3. The method of claim 1 wherein in the step e) a composite pressure pulse frequency is produced that is a factor of "n" times higher than the frequency between successive outlet pulses of the reference compressor, "n" being a total number of the at least two compressors.

4. The method of claim 1 wherein in the positive displacement compressors are screw compressors.
5. A system for attenuating noise in at least two positive displacement compressors proximately located from each other for use with at least one heating or cooling system comprising:
  - at least two compressors, the at least two compressors including a reference compressor, the at least two compressors having a selectably controllable rotational speed and a selectably controllable phase of operation;
  - a means of control for selectably controlling the rotational speed and the phase of operation of each of the at least two compressors;
  - a sensing means for sensing the rotational speed and the phase of operation of each of the two compressors;
  - the means of control controlling the rotational speed of the at least two compressors at a predetermined rotational speed that is substantially the same for each of the at least two compressors, the means of control controlling the phase of operation of the at least two compressors wherein the phase of operation of the remaining of the at least two compressors being shifted so that an outlet pressure pulse operatively produced by each of the remaining of the at least two compressors is substantially evenly spaced between successive outlet pulses operatively produced by the reference compressor.
6. The system of claim 5 wherein the means of control is a variable speed drive.
7. The system of claim 5 wherein the means of control for each of the at least one compressors is a variable speed drive.